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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,184	07/08/2003	Kang Soo Seo	1740-000009/US	7102

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EXAMINER	
ZHAO, DAQUAN	
ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/614,184	SEO ET AL.	
	Examiner	Art Unit	
	Daquan Zhao	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/8/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-35 are rejected under 35 U.S.C. 101 because "data structure" in claims 1, 36 and 37 is considered to be nonfunctional descriptive material.

When nonfunctional descriptive material is recorded on some computer-readable medium, in a computer or on an electromagnetic carrier signal, it is not statutory since no requisite functionality is present to satisfy the practical application requirement. Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See Diehr, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in Benson were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer."). Such a result would exalt form over substance. In re Sarkar, 588 F.2d1330, 1333, 200 USPQ 132, 137 (CCPA 1978) ("[E]ach invention must be evaluated as claimed; yet semantogenic considerations preclude a determination based solely on words appearing in the claims. In the final analysis under § 101, the claimed invention, as a whole, must be evaluated for what it is.") (quoted with approval in Abele, 684 F.2d at907, 214 USPQ at 687). See also In re Johnson, 589 F.2d 1070, 1077, 200 USPQ199, 206 (CCPA 1978) ("form of the claim is often an exercise in drafting"). Thus, nonstatutory music is not a computer component, and it does not

become statutory by merely recording it on a compact disk. Protection for this type of work is provided under the copyright law.

Claims 2-35 are also affected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 3, 4, 5, 6, 7, 9, 11, 15, 18, 19, 36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Takao (US 7,000,246 B1).

Regarding claim 1, Takao teaches a recording medium having a data structure for managing reproduction of video data recorded on the recording medium, comprising: at least one navigation area storing navigation management information for managing real-time reproduction path video data recorded on the recording medium (e.g. column 10, lines 54-67, video data are reproduced in accordance with the navigation data); and wherein said navigation management information includes at least one navigation unit comprising a plurality of video data packets and a plurality of real-time navigation packets (e.g. figure 29, column 21, lines 60-64, wherein NVT1 and NVT2 correspond to plurality of real-time navigation packets, ES(V) 11 and ES(V)12 correspond to plurality

of video data packets. The area of recording medium from the beginning of the first SIT to the beginning of the next SIT corresponds to the navigation management information area).

Regarding claim 36, Takao teaches a method of recording a data structure for managing reproduction of real-time navigation video data on a recording medium comprising: recording navigation management information for managing real-time navigation video data in at least one navigation area of the recording medium (see discussion of claim 1 above); and recording at least one navigation unit having a plurality of video packets and real-time navigation packets (see discussion of claim 1 above), each of said plurality of real-time navigation packets having a package identification number different from each of said plurality of video packets (e.g. figure 9, column 4, lines 32-40, NVT1 and NVT2 has different ID from the video packets).

Claim 37 is rejected for the same reasons as discussed in claim 36 above.

Regarding claim 2, Takao teaches at least one navigation unit having a plurality of transport packets (e.g. column 17, lines 27-35, ES(V) 11, ES(V) 12 are transport packets recorded on the recording medium shown in figure 29 wherein the area of the first SIT to the second SIT is considered to be one unit).

Regarding claim 3, Takao teaches each of said plurality of real-time navigation packets having a package identification number different from each of said plurality of video packets (e.g. figure 9, column 4, lines 32-40).

Regarding claim 4, Takao teaches the packet identification code for each of said real-time navigation packets is recorded in a transport packet header for each of

said plurality of real-time navigation packets (e.g. figure 4 shows the PID is at the beginning of the packet).

Regarding claim 5, Takao teaches each said plurality of real-time navigation packets are sequentially recorded in the at least one navigation unit (e.g. figure 29 shows NVT1 is recorded followed by NVT2).

Regarding claim 6, Takao teaches the plurality of sequentially recorded real-time navigation packets is recorded in a head portion of a corresponding at least one navigation unit (e.g. figure 29, the area from the first SIT to NVT2 is considered to be the head portion).

Regarding claim 7, Takao teaches at least one navigation unit includes a fixed number of transport packets (e.g. figure 29 shows two ES(V) 11, two ES(V) 12, one ES(A)11, one ES(A)12 and two NVT, which is a fixed total of 9 transport packet).

Regarding claim 9, Takao teaches each of said plurality of real-time navigation packets includes a header portion and a payload portion (e.g. figure 4, PID corresponds to the header and "content data" corresponds to the payload portion).

Regarding claim 11, Takao teaches the payload portion of each of said plurality of real-time navigation packets includes real-time navigation data (e.g. column 2, lines 45-53, the control data corresponds to the navigation data).

Regarding claim 15, Takao teaches plurality of real-time navigation packets are discontinuously recorded in the navigation unit (e.g. figure 29 shows NTV1 and NTV2 are discontinuously recorded).

Regarding claim 18, Takao teaches each of said plurality of real-time navigation packets includes a header portion and a real-time navigation section data portion (e.g. column 2, lines 45-53, the control data corresponds to the navigation data).

Regarding claim 19, Takao teaches header portion of each of said plurality of real-time navigation packets includes a packet identification code (e.g. column 2, lines 45-53, PID).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao (US 7,000,246) and further in view of Auwens et al (US 6,377,518 B1).

Regarding claim 38, Takao teaches recording a data structure for managing reproduction of real-time navigation video data on a recording medium comprising: recording navigation management information for managing real-time navigation video data in at least one navigation area of the recording medium (see discussion of claim 1 above); and recording at least one navigation unit having a plurality of video packets and real-time navigation packets (see discussion of claim 1 above), each of said plurality of real-time navigation packets having a package identification number different from each of said plurality of video packets (e.g. figure 9, column 4, lines 32-40). Takao

fails to teach a driver for driving an optical recording device to record data on the recording medium; a coder for encoding video data; and a controller for controlling the driver to record the encoded video data on a recording medium, the controller for controlling the driver to navigation information. Auwens et al teach a driver for driving an optical recording device to record data on the recording medium (e.g. figure 2, column 4, lines 38-43); a coder for encoding video data (e.g. column 5, lines 40-35, formatting unit 28); and a controller for controlling the driver to record the encoded video data on a recording medium, the controller for controlling the driver to navigation information (e.g. column 5, lines 9-15, and figure 5 shows the recording format which contains plurality of NV_PCK and V_PCK). It would have been obvious for one ordinary skill in the art at the time the invention was made to have utilized the recording/reproducing apparatus disclosed by Auwens et al to record or reproduce the data structure, taught by Takao, on a optical disc to increase storage capacity.

Claim 39 is rejected for the same reasons as discussed in claim 38 above.

4. Claims 20, 22, 23, 25, 26, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao (US 7,000,246 B1) as applied to claims 1, 2, 3, 4, 5, 6, 7, 9, 11, 15, 18, 19, 36 and 37 above, and further in view of Boyle (US 2002/0,106,197 A1).

See the teaching of Takao above.

Regarding claims 22, 26 and 28, Takao fails to teach aligning with at least one physical unit of the recording medium. Boyle teaches aligning with at least one physical unit of the recording medium (e.g. figure 4, paragraph [0027], aligns **3** sectors with 8

modified transport packet, 4 dummy added to the 188 byte TS to adjust the size of the packet to fit in sectors). It would have been obvious for one ordinary skill in the art at the time the invention was made to align the navigation packets with the physical recording unit for efficiently accessing video data stored on a storage medium (Boyle, paragraph [0007]).

Regarding claim 23, Boyle teaches physical recording unit is of a fixed size (e.g. paragraph [0005], 512 bytes).

Claim 25 is rejected for the same reasons as discussed in claim 22 above, wherein the file system allocation unit corresponds to the sector.

Regarding claim 20, Boyle teaches header portion includes a synchronization byte (e.g. figure 3A, Header with Synch Bytes 22).

5. Claims 29, 30, 31, 32, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao (US 7,000,246 B1) and Boyle (US 2002/0,106,197 A1) as applied to claims 20, 22, 23, 25, 26, 28, 1, 2, 3, 4, 5, 6, 7, 9, 11, 15, 18, 19, 36 and 37 above, and further in view of Fujinami (US 6,304,717 B1).

See the teaching of Takao and Boyle above.

Regarding claims 29, 30, 31, 33, and 34, Takao and Boyle fail to teach packet aligned with error correction code. Fujinami teaches packet aligned with error correction code (e.g. column 4, lines 27-32). It would have been obvious for one ordinary skill in the art at the time the invention was made to incorporate the teaching of Fujinami into

the teaching of Takao and Boyle to align the navigation packet with the error correction code for storage efficiency.

Regarding claim 32, Fujinami teaches each error correction code allocation unit contains 32 file system allocation units (e.g. column 4, lines 27-32, 32 kbytes).

6. Claims 8, 24 are 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao (US 7,000,246 B1) and Boyle (US 2002/0,106,197 A1) as applied to claims 1, 2, 3, 4, 5, 6, 7, 9, 11, 15, 18, 19, 36, 37 22, 23, 25, 26, 28 above, and further in view of Kim et al (US 7,020,384 B1).

See the teaching of Takao and Boyle above.

Regarding claims 24 and 27, Takao and Boyle fail to specify a packet includes a plurality of transport packets. Kim et al teach a packet includes a plurality of transport packets (e.g. figure 12, HD_PCK #1 contains plurality of TS, column 8, lines 7-13). It would have been obvious for one ordinary skill in the art at the time the invention was made to incorporate the teaching of Kim et al into the teaching of Takao and Boyle to divide the navigation packet into plurality of transport packet for high storage efficiency since Kim et al suggest dividing the stream into high density units using TS-format to store more data (kim et al, column 2, line 65- column 3, line 3).

Regarding claim 8, Boyle teaches each transport packet having a recording size of 188 bytes (e.g. figure 3A).

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takao (US 7,000,246 B1) as applied to claims 1, 2, 3, 4, 5, 6, 7, 9, 11, 15, 18, 19, 36 and 37 above, and further in view of Bestler et al (US 5,602,920).

See the teaching of Takao above.

Regarding claim 10, Takao fails to specify a payload unit start indicator. Bestler et al teach a payload unit start indicator (e.g. figure 2, column 2, line 59-60). It would have been obvious for one ordinary skill in the art at the time the invention was made to incorporate the teaching of Bestler into the teaching of Takao for high speed data transmission since Bestler et al sugest using the TS for transmission of one or more digitally compressed video data (Bestler et al, column 1, lines 30-35).

8. Claims 12,13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao (US 7,000,246 B1) as applied to claims 1, 2, 3, 4, 5, 6, 7, 9, 11, 15, 18, 19, 36 and 37 above, and further in view of Shimoji et al (US 2004/0,088,739 A1).

See the teaching of Takao above.

Regarding claim 12, Takao fail to teach at least one real-time navigation table for storing a plurality of real-time navigation packets each having the same packet identification code. Shimoji et al teach at least one real-time navigation table for storing a plurality of real-time navigation packets each having the same packet identification code (e.g. figure 28 A, paragraph [0336], PIDs 0x0092 corresponds to the same packet identification code. "7405" corresponds to the navigation table which contains plurality tables). It would have been obvious for one ordinary skill in the art at the time the

invention was made to incorporate the teaching of Shimoji et al into the teaching of Takao for user easily to organize the broadcasting information since Shimoji et al suggest in paragraph [0005] to all user to interactively select image information accordance with the content of the image information received.

Regarding claim 14, Shimoji et al teach at least one real-time navigation table includes a plurality of real-time navigation sub tables for holding a plurality of real-time navigation packets each having a common packet identification code (e.g. figure 17, paragraph [0280], tables 6302-6304 are considered to be sub table, and the table ID of "NVT(0,0)" are considered to be their IDs).

Regarding claim 13, Shimoji et al teach real-time navigation table includes a general information portion and at least one real-time playback information portion; wherein said general information control portion identifies the number of real-time playback information portions contained within the at least one real-time navigation table (e.g. figure 12, paragraph [0244], navigation information and content number corresponds to the general information control portion, and the video and audio data correspond to the real time playback information portion).

9. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao (US 7,000,246 B1) as applied to claims 1, 2, 3, 4, 5, 6, 7, 9, 11, 15, 18, 19, 36 and 37 above, and further in view of Nakamura et al (US 6,064,796).

See the teaching of Takao above.

Regarding claim 16, Takao fails to teach navigation packets are interleaved. Nakamura et al teach navigation packets are interleaved (e.g. column 23, lines 16-24).

It would have been obvious for one ordinary skill in the art at the time the invention was made to incorporate the teaching of Nakamura et al into the teaching of Takao for reproduction video data efficiently.

Regarding claim 17, Nakamura et al teach variable number of transfer packets recorded (e.g. column 22, lines 57-67, the number of packets depend on the amount of the video content. The number of frame in the GOP is variable, so as the number of packets)

10. Claims 21 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao (US 7,000,246 B1) as applied to claims 1, 2, 3, 4, 5, 6, 7, 9, 11, 15, 18, 19, 36 and 37 above, and further in view of official notice.

Regarding claim 21, Takao fails to specify a payload unit start indicator. The examiner takes official notice for he payload unit start indicator since it is well known in the art. It would have been obvious for one ordinary skill in the art at the time the invention was made to have utilized a payload start indicator in the system disclosed by Takao to increase data reproduction accuracy.

Regarding claim 35, Takao fails to specify a start flag and information indicating the position and number of plurality of packet. The examiner takes official notice for a start flag and information indicating the position and number of plurality of packet since it is well known in the art. It would have been obvious for one ordinary skill in the art at the time the invention was made to have utilized a start flag and information indicating the position and number of plurality of packet to increase data reproduction accuracy.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Seo et al (US 2005/0,036,761 A1); Mori et al (US 6,191,782 B1); Coupe et al (US 2002/0,064,189 A1); Shimoji et al (US 2005/0,283,819 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daquan Zhao whose telephone number is (571) 270-1119. The examiner can normally be reached on M-Fri. 7:30 -5, alt Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Thai Q, can be reached on (571)272-7382. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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1740-000009/US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INFORMATION SHEET

Applicant(s): Kang Soo SEO et al.

Application No: NEW

Filed: July 8, 2003

For: RECORDING MEDIUM HAVING DATA STRUCTURE WITH REAL-TIME NAVIGATION INFORMATION FOR MANAGING REPRODUCTION OF VIDEO DATA RECORDED THEREON...

Priority Claimed Under 35 U.S.C. §119 and/or 120:

	COUNTRY	DATE	NUMBER
/DZ/	Republic of Korea	July 9, 2002	2002-039548

Send correspondence to : HARNESS, DICKEY & PIERCE, P.L.C.
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The above information is submitted to advise the United States Patent and Trademark Office of all relevant facts in connection with the present application. A timely executed Declaration in accordance with 37 CFR 1.64 will follow.

Respectfully submitted,

By _____

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TLC:ewd

/Daquan Zhao/ 04/19/2007